SECTION VI.—WEATHER AND DATA FOR THE MONTH.

THE WEATHER OF THE MONTH.

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PRESSURE.

The distribution of the mean atmospheric pressure over the United States and Canada, and the prevailing directions of the winds, are graphically shown on chart VII, while the average values for the month at the several stations, with the departures from the normal, are shown in Tables I and III.

The mean barometric pressure for the month as a whole was above the normal, as in several preceding months, over much the greater portion of the country, only limited areas, comprising the Middle and South Atlantic States, the middle Mississippi Valley, and the extreme northern portion of the Rocky Mountain districts, showing values near to or slightly below the normal. The positive departures, while quite general, were as a rule moderate except that they were rather marked in restricted areas in the upper Lake region, the central and southern Rocky Mountain States, and southern California.

At the beginning of the month a moderate barometric depression moved eastward over the Lake region, and following in its wake was an extensive, though not marked, area of high pressure, which dominated the weather over eastern districts during the first few days and passed to sea about the 6th. From the 5th to the 8th a moderate disturbance passed northward along the Atlantic seaboard, with showery, unsettled weather in the Atlantic States. During the following week no pressure changes of consequence occurred, but the distribution had a tendency to relatively low readings to the northward, with southerly winds over eastern districts. From the 15th to the 18th a low moved eastward over the northern States, but thereafter relatively high pressure obtained over most of the country during the remainder of the month.

The distribution of the highs and lows was favorable for the frequent occurrence of southerly winds over the Rocky Mountain region and all districts to the eastward, while the prevailing directions were variable to the westward.

TEMPERATURE.

At the beginning of the month moderate temperatures obtained in nearly all portions of the country. By the 4th higher temperatures had overspread the Northwest and extended into the Plains region, and at the same time the weather had become unusually warm in the Southwest, but readings continued below the normal over the northern portion of eastern districts. By the 10th atmospheric pressure had decreased considerably in the Northwest and southerly winds and warmer weather had set in over the Plains States and Mississippi Valley, which gradually extended eastward and southward to the Atlantic and Gulf States. During the following week unusually warm weather prevailed over interior districts, the afternoon temperatures rising to 100°, or above, at many points in the Ohio Valley and to the westward.

About the 16th cooler weather set in over the Northwest, and during the following few days it advanced into the Missouri Valley and Plains region, greatly relieving the heated conditions that had prevailed in those sections. During the following few days the cool weather advanced eastward and southward, the temperature becoming quite low for the season of the year in the Ohio Valley and to the eastward. About the beginning of the third decade the distribution of atmospheric pressure was such as to again favor southerly winds and warm, humid weather over all interior portions of the country, and high temperatures obtained in the great central valleys and extended into eastern and southern districts. However, the last few days of the month brought much cooler weather to the northern States from the upper Mississippi Valley eastward.

For the month as a whole the temperature averaged above the normal in all districts east of the Rocky Mountains, save in the northeastern States, and also over the northern Mountain and Pacific Coast States. The greatest plus departures occurred in the Mississippi drainage area, where at some points the values were about 6° above the normal. The averages were less than the normal from the Middle Atlantic States northeastward and also from the central and southern Rocky Mountain region westward to the Pacific. However, the minus departures were not marked, reaching values as great as 3° only in limited areas in the northeast and in the central mountain districts of the West.

PRECIPITATION.

In the opening week of the month precipitation was unusually heavy over much of the Plains region, especially in western Texas and eastern New Mexico, the greater part of Kansas and portions of the adjoining States, while generous amounts were received over large portions of the Atlantic coast area, and the middle and east Gulf States, but over the Ohio and middle and upper Mississippi Valleys and the Lake region the rainfall was generally light. During the second week precipitation was local in character and the amounts were small, except over limited areas in the Atlantic and Gulf States and locally in the Plains States and upper Lake region, where in a few places they were in excess of 2 inches. Over much of the great cereal and grass producing States the rainfall was light, and none occurred in considerable portions of the Ohio Valley, the region of the Great Lakes, and over most of the Plains States.

About the middle of the month a disturbance moved eastward over the Lake region and was accompnaied by generous rains in much of the Ohio Valley, greatly relieving the severe drought that had persisted in that locality, and good showers also occurred at numerous points in other eastern districts, but severe drought continued in Missouri and portions of the adjoining States to the eastward and southward, and it was becoming severe in Texas. The last decade of the month was marked by deficient rainfall and more than the usual

amount of sunshine over the great agricultural districts. Generous local amounts were received in scattered localities, but over much of the central valleys and throughout the West there was little beneficial rain and drought had become severe in many localities.

For the month as a whole the precipitation was below the normal over much the greater part of the country. The amounts were above normal at many points in the more eastern States and also in the Plateau region, while in extreme western Texas and locally in the eastern portions of Colorado and New Mexico the falls were heavy, ranging from 2 to nearly 4 inches above the normal. However, in the great central valleys and the Plains region, including nearly the whole of Texas, precipitation was markedly deficient, the negative departures amounting to 2 inches, or more, over large areas.

For the season, March 1 to the end of July, the precipitation was below the normal over much of the central and southern portions of the country from the Rocky Mountains eastward. Numerous sections have received but little more than half the normal and some localities even less than that amount. In the Pacific Coast States, also, the rainfall was deficient.

GENERAL SUMMARY.

The marked features of the weather for July, 1914, were the deficient rainfall, unusually large percentage of sunshine, and persistence of high temperatures in the great corn-producing States and in the central and western portions of the cotton belt. This lack of sufficient rain in the corn belt, coming as a continuation of deficient moisture during the preceding month, and at a critical period in the development of the crop resulted in a marked deterioration in the condition of corn during the month. In the spring wheat belt the month also was hot and dry, resulting in considerable damage.

In the central and western portions of the cotton belt the rainfall was likewise deficient which, following more or less droughty conditions at the beginning, retarded the growth of plants and depreciated the general outlook. However, in the eastern portion of the belt the rainfall was more generous and vegetation made satisfactory progress.

Over the western Plains region and the Mountain and Plateau districts moisture was sufficient to maintain the ranges and cultivated crops in excellent condition, especially in the southern portion, and irrigation water continued plentiful. At the close of the month drought was becoming severe in the north Pacific Coast States.

Local, severe storms were quite frequent during the month, the most noteworthy of which were the destructive hailstorms that visited northwestern South Carolina on July 6 and 7. Great damage to growing crops, estimated at nearly a million dollars, was sustained in four counties in that locality. The area of destruction has been estimated at about 50,000 acres, on which the loss of crops ranged from 50 to 90 per cent.

Average accumulated departures for July, 1914.

Districts.	Temperature.			Precipitation.			Cloudiness.		Relative humidity.	
	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure from the normal.	General mean for the current month.	Departure from the normal.
	°F.	°F.	°F.	Inches	Inches	Inches			P. ct.	P. ct.
New England	66.0	−2.7	− 9.6	3.43	−0.20	−2.20	6.2	+1.1	81	+ 1
Middle Atlantic	73.0	−1.4	− 2.5	4.41	−0.10	−2.80	6.0	+1.1	76	+ 2
South Atlantic	79.1	+0.1	+ 3.0	4.56	−1.50	−9.40	5.1	−0.1	75	− 5
Florida Peninsula	81.7	−0.2	− 3.3	4.25	−2.20	−8.30	5.3	+0.3	75	− 3
East Gulf	81.3	+1.0	+ 3.0	4.86	−0.50	−6.60	5.6	+0.2	76	− 2
West Gulf	84.0	+2.1	+ 4.3	1.80	−1.40	−6.80	4.1	0.0	68	− 6
Ohio Valley and Tennessee	78.0	+1.2	+ 2.0	3.02	−1.00	−7.40	4.5	−0.1	62	− 7
Lower Lakes	71.2	−0.5	− 6.7	1.53	−1.90	−1.50	4.5	0.0	69	0
Upper Lakes	69.2	+1.2	+ 2.5	2.56	−0.60	+0.30	4.2	−0.4	74	+ 2
North Dakota	72.8	+3.8	+14.4	2.41	−0.50	+2.40	3.0	−1.4	68	+ 2
Upper Mississippi Valley	78.3	+2.9	+12.4	1.33	−2.30	−5.60	4.1	−0.2	63	− 5
Missouri Valley	78.7	+2.9	+17.2	2.20	−1.60	−2.40	3.9	−0.3	62	− 4
Northern slope	70.5	+2.4	+16.1	0.78	−0.80	−1.90	3.9	+0.2	53	+ 1
Middle slope	79.1	+2.3	+15.8	1.52	−1.40	−3.40	4.5	+0.4	60	0
Southern slope	80.8	+0.4	+ 6.5	3.06	+0.20	+0.60	3.3	−1.2	60	+ 1
Southern Plateau	77.1	−1.9	+ 1.9	1.85	−0.60	−0.40	4.3	+1.0	50	+12
Middle Plateau	71.4	−0.7	+ 8.4	1.05	−0.40	+0.40	4.4	+1.3	46	+14
Northern Plateau	73.7	+2.8	+17.3	0.89	+0.40	−0.50	3.3	+0.6	42	+ 1
North Pacific	61.5	−0.3	+13.4	0.07	−0.70	+0.30	3.6	−1.0	72	+ 7
Middle Pacific	64.2	−1.3	+ 6.7	0.00	0.00	−0.40	4.0	+0.5	64	− 2
South Pacific	69.3	−0.6	+13.7	0.00	0.00	+3.80	3.2	+0.4	68	+ 4

Maximum wind velocities, July, 1914.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
		mi./hr.				mi./hr.	
Augusta, Ga.	26	50	n.	New York, N. Y.	23	88	nw.
Block Island, R. I.	6	56	ne.	Norfolk, Va.	13	54	nw.
Columbia, S. C.	9	59	sw.	Do.	15	58	w.
Fort Wayne, Ind.	24	52	nw.	Pittsburgh, Pa.	12	54	nw.
Fort Worth, Tex.	24	50	e.	Topeka, Kans.	16	50	nw.
Louisville, Ky.	10	52	se.	Trenton, N. J.	27	72	ne.
Mt. Tamalpais, Cal.	7	50	nw.				